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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,258	08/08/2000	paul C. Allen	4926/ETEC	4935
32588	7590	03/17/2004	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			FERNANDEZ, KALIMAH	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/634,258

Applicant(s)

ALLEN, PAUL C.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-16, 18-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16, 18-22 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6,7, 12-13, 18-19, and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,057,639 issued to May et al and "Deformable-Mirror Spatial Light Modulators" authored Hornbeck, SPIE critical Reviews Series. Vol. 1150, pgs. 86-102.
3. May et al discloses a device for generating a plurality of electrons having a source of radiation (col.2, lines 1-5).
4. May et al discloses a spatial light modulator (40) (col.6, lines 7-11).
5. May et al discloses said modulator (40) having a position so as to modulate said radiation emanating from said source of radiation (col.6, lines 7-10).
6. May et al discloses a photo-cathode (i.e. photo-emitter) (5) (col.3, lines 23-26).

7. May et al discloses said photo-emitter having a position so as to receive said modulated radiation wherein said photo-cathode produces a plurality of electron beams under impact by said modulated radiation (col.3, lines 20-22;col.4, lines 23-49).
8. May et al further discloses the production of a plurality of electron beam is the result of said modulation of the radiation by the spatial light modulator (col.6, lines 40-46).
9. May et al does not teach the limitation " being configured to alter radiation modulation characteristics thereof in response to computer control".
10. However, Hornbeck teaches a computer-controlled SPM (pg.95, section 6.1, lines 1-25).
11. It would have been obvious to a person having ordinary skill in the art at the time this invention was made to incorporate the teachings of Hornbeck into May et al since both May and Hornbeck teach the application of voltage to said photo-cathode for generation of the pattern (see 4, lines 10-22 of May et al; pg. 86, col. 1, lines 1-6 of Hornbeck) and because Hornbeck teaches the advantage of higher modulation efficiency (see pg. 86, col.2, lines 18-27 of Hornbeck).

12. As per claims 6,12, 18 and 24, Hornbeck teaches said spatial light modulator is a micro-mirror array (pg.86, col.1, lines 1-5).

13. Claims 4,10, 16, and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No. 6,057,639 issued to May et al and Hornbeck as applied to claims 1,9,13, and 19 and further in view of US Pat No 4,196,257 issued to Engstrom et al.

14. The obvious combination of May et al and Hornbeck teaches the claimed invention except for "said photocathode is cesium telluride".

15. However, Engstrom et al teaches the typical use of cesium telluride photocathodes (col.1, lines 5-11; col.1, lines 55-64).

16. It would have been obvious to an ordinary artisan to incorporate the use of a cesium telluride photocathode into May et al, since Engstrom et al teaches high sensitivity (col.2, lines 59-62).

17. Claims 2-3,8-9,14-15, and 20-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over May et al and Hornbeck as applied to claims 1,7,13 and 19 above, and further in view of US Pat No 5,395,738 issued to Brandes et al.

18. The obvious combination of May et al and Hornbeck teaches the claimed invention except for UV radiation.

19. Brandes et al the use of a UV radiation source (col.1, lines 11-15).

20. It would have been obvious to an ordinary artisan to incorporate the teachings of Brandes et al into May et al since Brandes et al teaches improved performance (col.3, lines 9-60).

21. As per claims 3,9,15 and 21, Brandes et al discloses the generation of UV radiation, which is conventional produced using a mercury arc lamp or the like (col.7, lines 23-33).

### ***Response to Arguments***

22. Applicant's arguments filed 11-26-03 have been fully considered but they are not persuasive.

23. Applicant asserts that May fails to provide a SLM where the modulation controls the pattern of the electron beam. In response, it is pointed out that May discloses control of the pattern of the electrons emitted is formed by the SLM, which modulates the light received (see col.2, lines 6-32).

24. Next, applicant contends that "May's SLM is a static, non-modifiable element." However, applicant is referred to col.4, lines 50-64 of May, which discloses the ability to actively modify the luminosity for a desired pattern. Moreover, the teaching of temporal and/or spatial multiplexing (i.e.

transmission of several signals simultaneously on one circuit) obviously suggest the use of computer control, whereas Hornbeck is relied upon to illustrate the desirability of computer operated multiplexing as commonly knowledge in the art.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 6,498,349 issued to Thomas et al is considered relevant because it teaches the common knowledge in the art concerning addressable field emitter arrays. US Pat No 6,544,698 issued to Fries is also considered relevant. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the

mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2420. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

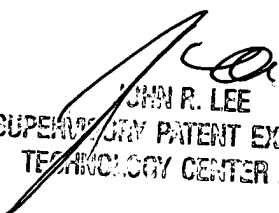
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.



For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kF

  
JOHN R. LEE  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2800